Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1 **(previously presented)**: A method of controlling the distribution of electromagnetic fields launched by an excitation coil to excite a plasma in a vacuum plasma processor for processing a workpiece, the coil being connected to and responsive to a power source and including plural parallel connected windings for coupling electromagnetic fields to plasma in the chamber, the method comprising (a) directly varying the total amount of output power of the source so that source applies different amounts of total power to the plural parallel connected windings for different distributions of electromagnetic fields, and (b) varying the amount of current the source applies to individual windings of plural windings so that for different distributions of electromagnetic fields the source applies different amounts of current to the individual windings.

Claim 2 **(previously presented)**: The method of claim 1 wherein the windings are arranged so (a) one of the windings is an exterior winding located so electromagnetic fields generated by it are in proximity to a peripheral wall of the chamber, and (b) electromagnetic fields generated by the remainder of the coil are remote from the chamber peripheral wall, and controlling the current applied to the exterior winding so the electromagnetic field generated by the exterior winding exceeds the electromagnetic field generated by the remainder of the coil.

Claim 3 (original): The method of claim 1 wherein the windings are arranged so (a) one of the windings is an exterior winding located so electromagnetic fields generated by it are in proximity to a peripheral wall of the chamber, and (b) electromagnetic fields generated by the remainder of the coil are remote from the chamber peripheral wall, and controlling the current applied to the exterior winding so the electromagnetic field generated by the exterior winding is less than the electromagnetic field generated by the remainder of the coil.

Claim 4 (original): The method of claim 1 wherein the windings are arranged so (a) one of the windings is an exterior winding located so electromagnetic fields

generated by it are in proximity to a peripheral wall of the chamber, and (b) electromagnetic fields generated by the remainder of the coil are remote from the chamber peripheral wall, and controlling the current applied to the exterior winding so the electromagnetic field generated by the exterior winding is about the same as the electromagnetic field generated by the remainder of the coil.

Claim 5 **(previously presented):** The method of claim 1 wherein each winding includes first and second terminals, the first terminal being connected via a first series capacitor to an output terminal of a matching network driven by a source of the power, the second terminal being connected via a second series capacitor to a ground terminal, the varying steps for the current in the individual windings being performed by varying the value of at least one capacitor associated with each individual winding and the total power the source supplies to the windings.

Claim 6 **(previously presented):** The method of claim 1 further including maintaining the power coupled by the source to one of the windings substantially constant for different distributions and changing the power coupled to another of the windings for the different distributions.

Claim 7 **(previously presented):** The method of claim 6 wherein the maintaining and changing steps are performed by varying the values of impedances associated with the individual windings and the total power applied by the source to the coil.

Claim 8 (original): The method of claim 7 wherein each winding includes first and second terminals, the first terminal being connected via a first series capacitor to an output terminal of a matching network driven by a source of the power, the second terminal being connected via a second series capacitor to a ground terminal, and controlling the values of the impedances by controlling the values of at least one capacitor associated with each individual winding.

Claim 9 (original): The method of claim 8 wherein the effects due to substantial standing wave current variations at a relatively high RF frequency along the lengths of the individual windings are minimized by adjusting the value of at least one capacitor

associated with each winding so that adjacent windings have standing wave RF current maxima that are radially opposite to each other.

Claim 10 (original): The method of claim 1 wherein the power is RF having a frequency and the windings have lengths such that there are no substantial standing wave current variations along the lengths of the individual windings, and adjusting the value of an impedance coupled with each winding so that there is substantially uniform plasma density distribution on the workpiece.

Claim 11 **(previously presented)**: An inductive plasma processor for processing a workpiece, comprising a plasma excitation coil, the coil including plural parallel connected windings, a source for supplying power to the plural parallel connected windings, the source being connected to the plural parallel connected windings for causing current from the source to flow in parallel to the plural parallel connected windings, variable impedance arrangements respectively coupled with the plural parallel connected windings for varying the currents flowing from the source to each of the plural parallel connected windings, and a controller coupled to the source and components for (a) directly varying the total output power of the source and the total power the source supplies to the plural parallel connected windings and (b) varying values of components of the variable impedance arrangements so that for different distributions of electromagnetic fields the source is arranged to supply different amounts of total power and different relative currents to the plural parallel connected windings.

Claim 12 **(previously presented)**: The plasma processor of claim 11 wherein the source is an RF source and the controller is arranged for varying the total power and the variable impedance arrangements so that for different distributions of electromagnetic fields generated by and supplied by the different windings to the plasma the current flowing in one of the windings remains substantially constant and the current in the remainder of the coil changes,

each of the windings including first and second end terminals and each of the impedance arrangements including first and second variable capacitors, each of the first capacitors being connected in series with its respective first terminal for supplying RF energy from the RF source to the respective winding, each of the second capacitors being connected in series between its respective second terminal and ground, the controller being arranged for varying the values of

the first and second variable capacitors.

Claim 13: **(previously presented)**: The processor of claim 12 wherein each of the impedance arrangements includes a variable reactance coupled to its respective winding, the variable reactance of each impedance arrangement being arranged for varying the location of the maximum amplitude of a standing wave current in its respective winding, the controller being arranged for varying the values of the variable reactance of each impedance arrangement.

Claim 14 (original): The processor of claim 13 wherein the source is an RF source, the frequency of the RF source and the length of the windings are such that there are substantial standing wave current variations along the length of each winding.

Claim 15 **(previously presented)**: The processor of claim 12 wherein each of the impedance arrangements includes a variable reactance coupled to its respective winding, the variable reactance of each impedance arrangement being arranged for varying the value of the maximum amplitude of a standing wave RF current in its respective winding, the controller being arranged for varying the value of the variable reactance of each impedance arrangement.

Claim 16 (original): The processor of claim 15 wherein the source is an RF source, the frequency of the RF source and the length of the windings being such that there are no substantial standing wave current variations along the length of each winding.

Claim 17 **(previously presented)**: The processor of claim 12 wherein the source is an RF source, each of the windings including first and second end terminals and each of the impedance arrangements includes first and second variable capacitors, each of the first capacitors being connected in series with its respective first terminal for supplying RF energy from the RF source to the respective winding, each of the second capacitors being connected in series between its respective second terminal and ground, the controller being arranged for varying the values of the first and second variable capacitors.

Claim 18 (original): The processor of claim 17 wherein the first and second capacitors are arranged so their values control the magnitude and location of the maximum amplitude of a standing wave RF current in their respective winding.

Claim 19 **(previously presented)**: The processor of claim 12 wherein the source is an RF source, the frequency of the RF source and the length of the windings being such that there are no substantial standing wave current variations along the length of each winding, and each variable impedance arrangement includes a single variable reactance coupled with each winding, the controller being arranged for varying the value of the variable reactance to control the maximum amplitude of the standing wave current in each winding.

Claim 20 **(previously presented)**: A vacuum plasma processor for processing a workpiece, comprising a plasma excitation coil, the coil including plural parallel connected windings, a source for supplying power to the plural parallel connected windings, the source being connected to the plural connected windings for causing different parallel currents from the source to flow in the plural parallel connected windings, impedance arrangements respectively coupled with the plural parallel connected windings, the power of the source and the values of reactances of the impedance arrangements being such that (a) the maximum amplitude of a standing wave current in one of the windings differs from the maximum amplitude of a standing wave current in the remainder of the coil and (b) adjacent windings have standing wave current maxima that are radially opposite from one another.

Claim 21 **(previously presented)**: The processor of claim 20 wherein each of the windings is arranged for coupling an electromagnetic field to plasma in the chamber, one of the windings being an exterior winding located so electromagnetic fields generated by it is in proximity to a peripheral wall of the chamber, the remainder of the coil being arranged so electromagnetic fields generated by the remainder of the coil are remote from the chamber peripheral wall, the controller being arranged to cause the values of the total power the source supplies to the coil and of the reactances to be such that the electromagnetic field generated by the exterior winding exceeds the electromagnetic field generated by the remainder of the coil.

Claim 22 **(previously presented)**: The processor of claim 20 wherein each of the windings is arranged for coupling an electromagnetic field to plasma in the chamber, one of the windings being an exterior winding located so an electromagnetic field generated by it is in proximity to a peripheral wall of the chamber, the remainder of the coil being arranged so electromagnetic fields generated by the remainder of the coil are remote from the chamber

peripheral wall, the controller being arranged to cause the values of the total power the source supplies to the coil and the reactances to be such that the electromagnetic field generated by the exterior winding is less than the electromagnetic field generated by the remainder of the coil.

Claim 23 **(previously presented)**: The processor of claim 20 wherein each of the plural parallel connected windings is arranged for coupling an electromagnetic field to plasma in the chamber, one of the windings being an exterior winding located so an electromagnetic field generated by it is in proximity to a peripheral wall of the chamber, the remainder of the coil being arranged so electromagnetic fields generated by the remainder of the coil are remote from the chamber peripheral wall, the controller being arranged to cause the values of the total power the source supplies to the coil and of the reactances to be such that the electromagnetic field generated by the exterior winding is about the same as the electromagnetic field generated by the remainder of the coil.

Claim 24 (original): The processor of claim 19 wherein the source is an RF source, the RF source frequency and the lengths of the windings are such that there are no substantial standing wave current variations along the length of each winding, the reactance coupled with each winding being arranged for controlling the value of the standing wave current in the respective winding.

Claim 25 **(previously presented):** A vacuum plasma processor for processing a workpiece, comprising a plasma excitation coil, the coil including plural connected parallel windings, a source for supplying power to the plural parallel windings, impedance arrangements respectively coupled with the plural parallel connected windings, the source frequency and the lengths of the windings being such that there are no substantial standing wave current variations along the length of each winding, the impedance arrangement coupled with each winding being arranged for controlling the value of the standing wave current in the respective winding.

Claim 26 (canceled):

Claim 27 (canceled):

Claim 28 **(previously presented):** A vacuum plasma processor for processing a workpiece, comprising a plasma excitation coil, the coil including at least one winding, a source

for supplying power to the at least one winding, the source frequency and the length of the at least one winding being such that there are no substantial standing wave current variations along the length of the at least one winding.

Claim 29 **(previously presented)**: The plasma processor of claim 28 wherein the coil includes plural parallel windings, each having a length such that there are no substantial standing wave current variations along the lengths of the windings and further including impedance arrangements respectively coupled with the parallel windings and the impedance arrangement coupled with each winding being arranged for controlling the value of the current in the respective winding.

Claim 30 **(previously presented)**: The plasma processor of claim 28 further including an impedance arrangement coupled with the at least one winding for controlling the value of the current in the at least one winding.

Claim 31 **(previously presented):** Apparatus for controlling distribution of electromagnetic fields for exciting a plasma in a vacuum plasma processor for processing a workpiece, the apparatus comprising an excitation coil for launching the fields, the coil including plural windings for coupling electromagnetic fields to plasma in the chamber, an AC source for supplying power to the windings for causing different parallel currents to flow in the parallel connected windings, and a controller coupled with the AC source for varying the total amount of power applied by the source to the individual plural windings of the plural parallel connected windings so that for different distributions of electromagnetic fields different amounts of current are applied to the individual windings and different amounts of total power are applied by the source to the windings.

Claim 32 **(previously presented):** Apparatus for controlling distribution of electromagnetic fields for exciting a plasma in a vacuum plasma processor for processing a workpiece, the apparatus comprising an excitation coil for launching the fields, the coil including plural parallel connected windings for coupling electromagnetic fields to plasma in the chamber, an AC source for supplying power to the windings for causing different parallel currents to flow in the parallel connected windings, the plural parallel connected windings being arranged so (a) one of the windings is an exterior winding located so electromagnetic fields generated by it are in

proximity to a peripheral wall of the chamber, and (b) electromagnetic fields generated by the remainder of the coil are remote from the chamber peripheral wall, and a controller arranged for varying the currents applied by the source to the windings for causing the electromagnetic field generated by the exterior winding to exceed the electromagnetic field generated by the remainder of the coil.

Claim 33 **(previously presented)**: Apparatus for controlling distribution of electromagnetic fields for exciting a plasma in a vacuum plasma processor for processing a workpiece, the apparatus comprising an excitation coil for launching the fields, the coil including plural windings for coupling electromagnetic fields to plasma in the chamber, an AC source for supplying power to the windings for causing different parallel currents to flow in the parallel connected windings, the plural parallel connected windings being arranged so (a) one of the plural parallel connected windings is an exterior winding located so electromagnetic fields generated by it are in proximity to a peripheral wall of the chamber, and (b) the electromagnetic fields generated by the remainder of the coil are remote from the chamber peripheral wall, and a controller arranged for varying the currents applied by the source to the windings for causing the electromagnetic field generated by the exterior winding to be less than the electromagnetic field generated by the remainder of the coil.

Claim 34 **(currently amended)**: Apparatus for controlling distribution of electromagnetic fields for exciting a plasma in a vacuum plasma processor for processing a workpiece, the apparatus comprising an excitation coil for launching the fields, the coil including plural windings for coupling electromagnetic fields to plasma in the chamber, an AC source for supplying power to the windings for causing different parallel currents to flow in the parallel connected windings, and a controller ~~nged~~ arranged for varying the currents applied by the source to the windings for causing the current flowing in one of the windings to remain substantially constant and the current in the remainder of the coil to change.

Claim 35 **(previously presented)**: The apparatus of claim 34 wherein the coil includes plural windings extending radially and circumferentially between a pair of excitation terminals connected for receiving power from output terminals of the source.

Claim 36 **(previously presented)**: The apparatus of claim 35 wherein one of the windings is an interior winding and another of the windings is an exterior winding surrounding the interior winding.

Claim 37 **(previously presented)**: The apparatus of claim 32 wherein the windings of the coil include plural windings extending radially and circumferentially between a pair of excitation terminals connected for receiving power from output terminals of the source.

Claim 38 **(previously presented)**: The apparatus of claim 37 wherein one of the windings is the interior winding and another of the windings is an exterior winding surrounding the interior winding.

Claim 39 **(previously presented)**: The apparatus of claim 33 wherein the windings of coil include plural windings extending radially and circumferentially between a pair of excitation terminals connected for receiving power from output terminals of the source.

Claim 40 **(previously presented)**: The apparatus of claim 39 wherein one of the windings is the interior winding and another of the windings is an exterior winding surrounding the interior winding.